

## TREES OUTSIDE FORESTS: DEFINITION AND TAKING ACCOUNT

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### THE ASSESSMENT OF FORESTRY RESOURCES

In order to assess the state of the world's forests every 10 years, the FAO uses precise definitions that are accepted and recognized throughout the world. Diverse inventories and statistics are established on the basis of these definitions. This universal base should make it possible to draw reliable comparisons between statistics in terms of time and space. Therefore, FAO proposes standard definitions for numerous terms, such as "soil degradation", "deforestation", "agricultural land", "wooded land", and "forests".

According to the FAO definition, a "forest" is a population of bushes, shrubby trees, and trees of over 5 m in height which covers (projection from the crown) more than 10% of a minimum surface area of 0.5 ha (FRA, 1998).

### WHAT ABOUT WOODY RESOURCES OUTSIDE FORESTS?

For several decades, foresters, environmentalists, and land planners have been aware that woody resources (over and above wood from trees) are not always extracted from forests. Hence, the development of the expression "trees outside the forest" or "non-forest trees" which conjures up a multitude of images. The fact that the expression can be interpreted in many different ways means that a precise definition is called for so that this "new" resource can be evaluated and included in "forestry" or "agricultural" statistics.

The first definition of trees outside the forest was proposed at the meeting in Kotka, Finland (Nyyssonen and Ahti, 1996).

FAO organized two initiatives in order to draw this underestimated resource to the attention of decision-makers and planners throughout the world:

- A workshop from 21-23 September 1998 in Orléans (France) organized by IRD (Institut de recherche pour le développement, a French research and development institute) which brought together 40 specialists from different countries and institutions (Alexandre D.Y. *et al.* 1999);
- A report of the existing knowledge on trees outside the forest which was compiled by CIRAD-forêt: "*Les arbres hors forêt : pour une meilleure prise en compte.* (Trees outside the forest : Raising awareness)". This report was co-published by FAO and CIRAD in November 2001 and made it possible to improve the definition of the term "trees outside the forest" (Bellefontaine *et al.*, 2001).

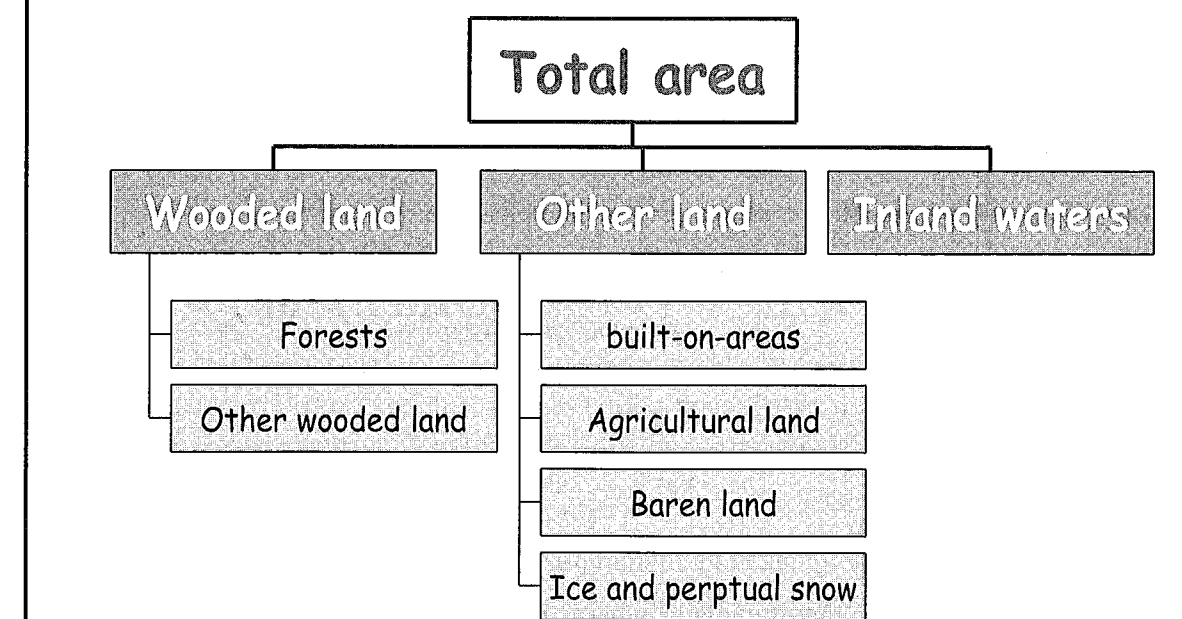
How can "trees outside the forest" be defined?

Here are several definitions which will help provide a framework for the concept of "trees outside the forest".

The term "emerged land" includes "wooded land", "other land", and "inland waters" (Figure 1).

Figure 1

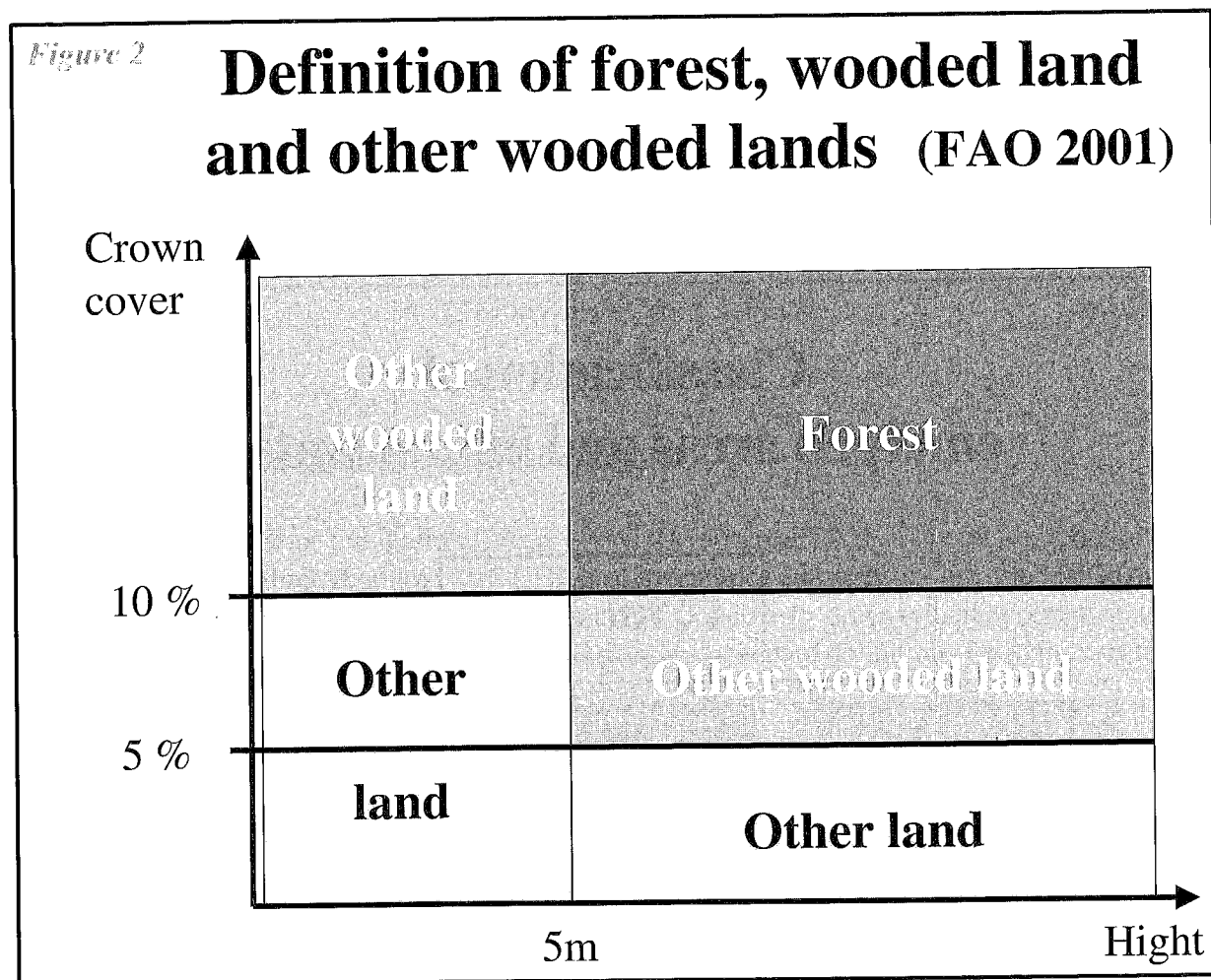
### Classification of emerged areas and inland water



"Wooded land" can be divided into "forest land" (synonymous with "forests") and "other wooded land" (Figure 2). The term "other wooded land" relates to land of more than 0.5 ha where shrubs of up to 5 m high cover more than 10% of the surface area or where shrubby trees and trees of more than 5 m high cover 5-10% of the surface area.

The term forest does not include land which is used primarily for agricultural purposes.

As a result, "trees outside the forest" fall into the category for "other land", which refers to land that is neither "forest" nor "other wooded land". In other words, they are on land where the woody crown cover is below 10% and less than 5 m high or below 5% and more than 5 m high. "Other land" also applies to all land of less than 0.5 ha where there is more than 10% woody cover, which includes linear formations such as shelter belts and riparian forests. Trees outside the forest can also be found on land that is used primarily for agriculture which is, by definition, excluded from "forests" but not necessarily from "other wooded land".



### IMPROVING THE DEFINITION

The advantage of this definition is that it explains what is meant by trees outside the forest. It seems to be satisfactory when applied to natural environments where there has been little human interference. In the case of deforestation, it also includes the scattered trees left and the small groves that remain or are planted after agricultural clearing. However, it does not always correspond to our idea of trees outside the forest, particularly those found in very manmade countryside.

Thus, how should the wooded formations in the following examples be classified?

Oases and their date palms; woody species on fallow farm land which is sometimes agricultural sometimes forest; the grazing-orchards of France which primarily produce grass for livestock and not fruit or timber; linear wooded structures (windbreaks, straight plantations along water courses or roads, etc.); agroforestry parks and systems where shade trees and food crops or industrial produce (coffee, cocoa, tea, etc.) are intercropped, etc. According to the FAO definition, all these formations could be considered as forest formations. But are they really? Are they not rather trees outside the forest because of their uses?

The same question applies to agro-forests in Asia whose name would suggest that they be classified as "forests" although they produce agricultural products (which are also included in national agricultural production statistics). However, because of the very manmade nature of these "forest gardens" and the fact that they produce other products besides wood, many people do not consider them to be forests any more than fruit orchards.

In contrast, the sylvo-pastoral systems in Latin America (pasture and ranching, "*espinal*" in Chile, Mexican "*matorral*", the Argentinian plains, etc.), or Europe (the more or less dense stands of oak in the Spanish "*dehesa*" and the Portuguese "*montado*", etc.) could be classified as forest because grazing in forests is a traditional practice found all over the world.

Lastly, some sparsely wooded "forests" that are relatively untouched by Man in high mountain areas or arid zones or even some sparse formations of "miombo" in East Africa are naturally classified as "forests" or as "other forest land" if they are too sparse.

These questions show that the current definition of trees outside the forest, although very clear, is not entirely satisfactory. We do not consider that trees outside the forest can be adequately defined using criteria for the amount of crown cover, tree height, and plot size.

This explains why the definition of trees outside the forest presented in the FAO-CIRAD document includes the following categories of trees found in open environments:

- Scattered trees in permanent meadows or grassland.
- Permanent tree crops, orchards, and grazing-orchards, such as industrial fruit trees, coconuts, date palms.
- Trees in wooded agroforestry systems, such as coffee, cocoa, trees in home gardens.
- Trees in urban environments and around infrastructures, such as parks and gardens, around buildings, along streets, roads, water courses, and canals.

Despite these additional details, some questions still remain. For example, the definition of "forests" includes shelterbelts and windbreaks that *are more than 20 m wide and more than 0.5 ha in size*. In the definition of "trees outside the forest", only shelterbelts of *less than 0.5 ha and less than 20 m wide* are included. If this is to be coherent with the given definition of forests, it would be better to say *less than 0.5 ha or less than 20 m wide*.

The definition of trees outside the forest still needs to be more specific. The seminar which is currently underway (26-28 November 2001) and the Comité des Forêts (COFO, a forestry committee), which meets every 2 years, could provide FAO with the opportunity to address the issue of trees outside the forest. It is these assemblies that ultimately decide whether or not to modify the current definition of "trees outside the forest".

Nevertheless, we would like to suggest that an additional criterion—which already appears in the definition of forests—be considered, namely the principal land use. The definition of "forests" *excludes land which is used primarily for agricultural purposes*. Yet, this definition does not specify the point at which land is considered to be used for agricultural or pastoral purposes. If agricultural production is extensive and temporary, for example shifting cultivation using slash and burn, should the land be considered agricultural?

We do not think so. Instead, we consider that if land is to be classified as agricultural, then the agriculture should be intensive and sedentarized to a certain extent. In these circumstances, if the trees are an integral part of the cropping system, we think that they should be considered as trees outside the forest. Even woody species grown on short-term fallow (5-7 years) should be included in this category if they are part of an intensive agricultural system where the length of cropping is longer than the fallow period. The same applies to trees in pasture if the pasture is used extensively and managed using fire. In other words, these trees should be included in the forestry category or as trees outside the forest depending on whether they cover more or less than 10% of the land.

The definition of trees outside the forest should, therefore, take into account the vegetation's evolution which is linked to how manmade and domesticated the environment is. Land clearance drastically reduces woody cover. After this phase of depletion, we have observed that people generally reconstitute the forest cover, at least in part. This new cover is often very structured spatially. The forest, as such, often appears to be like a long-term fallow, like real forestry plantations or preserved natural forest areas. Beyond this, the trees are in the middle of cropping or grazing land, in other words on manmade land where they have many and varied functions. Therefore, these trees have been tamed, indeed domesticated. Trees which are on intensive agricultural or grazing land are not usually included in forestry statistics. The same applies to trees in urban areas. Even when their cover exceeds 10%, they are still considered to be trees outside the forest.

The difficulty of finding a simple definition for a tree outside the forest stems from the importance that it represents for different human societies and the economic role that it fulfils. Therefore, the tree outside the forest can no longer be ignored by politicians and decision-makers. We make several recommendations below—which are not exhaustive—so that these trees can be taken into account on every level, particularly at the decision-making level.

## RECOMMENDATIONS

### Defining, accounting for and diversity

The national and world assessments of woody resources are incomplete because, in general, they only include areas qualified as forest and exclude "trees outside the forest" found in rural and urban areas. The current term "trees outside the forest" does not give a sufficiently clear illustration of the diversity of this resource which straddles different sectors, fields, and disciplines. Thus, the concept will inevitably develop as the resource is taken into account by land planning. The proposals to improve the definition, include local specificities, and facilitate comparisons between countries or ecosystems have been presented here.

For planning, we recommend that trees outside the forest are included systematically in the assessments of woody resources. A discussion is required on a national and global level so that trees outside the forest can be included in an unequivocal classification of land that is both pluridisciplinary and multi-sectorial. In this context, the definition of "forests" will undoubtedly have to be revised. It is important to ensure that the definition for trees outside the forest is the result of a broad discussion between stakeholders and users.

## NATIONAL POLICY, INTERNATIONAL DISCUSSION AND AGREEMENT

In many countries, people use trees outside the forest spontaneously even though there are no national policies to encourage them to do so. The role of these trees is not officially recognized despite the fact that they have important functions. In addition, international conventions make no mention of this category although they do refer to other ecosystems.

*On a national level, a clear coherent policy that acts as an incentive in terms of trees outside the forest is advisable to ensure that land planning is truly integrated. On an international level, trees outside the forest should be included among donors' major environmental concerns, conventions, and policies.*

## SOCIAL, ECONOMIC, AND ENVIRONMENTAL CONTRIBUTION

Trees outside the forest are characterized by their relationships with Man and society. They often provide a vital contribution to the needs and incomes of rural and urban households. The sustainability of these tree systems is ensured through diverse management practices. However, there are gaps in our knowledge on the dynamics of this resource, particularly in terms of the relationships between "trees outside the forest, Man and society, agriculture, and the environment". The economic, social, and environmental contribution made by these wooded systems is not fully recognized. Disperse, fragmentary and empirical information is already available for numerous countries. A report appraising the real contribution of trees outside the forest in terms of the global supply of services and products is often inadequate.

Programmes for food security and the well-being of people can no longer ignore the resource represented by trees outside the forest. National policies should continue to manage these trees in a flexible way. Integrated regional and land planning practices should be varied and adapted to the different local conditions and should evolve in line with social and cultural changes. New economic tools should be tested. A summary and an analysis of existing knowledge are vital for outlining a policy to encourage "trees outside the forest".

## IMPROVED KNOWLEDGE, EXTENSION, AND TRAINING

We do not know enough about the role and function of trees outside the forest to be able to improve their management. This explains why existing training courses are still very specific and disciplinary (for example, preliminary pruning of fruit trees). Similarly, extension programmes only address certain—often very sectorial and thematic—issues and fall short of users' expectations.

*We need to further our understanding of how trees outside the forest function within production systems. In order to do this, support is needed so that research programmes can be developed to meet national needs. Training and extension programmes should be developed by using a more systematic approach that takes into account people's needs and concerns.*

## EVALUATING THE RESOURCE

The available qualitative and quantitative data on trees outside the forest is very fragmentary and often only represents the situation on a local (rarely regional) level. Until now, most assessments have been carried out

on manmade and agroforestry areas. The evaluation of the extremely diverse products is not very reliable. Therefore, comparing inventories is not easy.

The methods used to conduct the inventory of forests do not seem adapted to scattered resources of this kind. The evaluation of trees outside the forest is complex because it requires a great deal of information.

*It is important to define the objectives of the evaluation clearly. These should address the needs and interests of the stakeholders concerned and should be taken into account when the results are applied. New inventory methods, particularly inventory plans, should be tested on different types of trees outside the forest and on significant areas before being applied on a larger scale. This type of evaluation should also include socio-cultural and economic aspects which are essential for maintaining the resource and ensuring that it is well managed.*

## CONCLUSION

On a global level, trees outside the forest represent a significant source of wood production and other non-woody tree products. Neither the resource nor its productivity have been quantified. This is partly because there is not a sufficiently precise definition of what should be surveyed and, partly, because of the difficulty of conducting an inventory of such a diverse and scattered resource.

The existence of this resource, which has long been ignored, has disproved many alarmist theories about accelerated desertification and the systematic disappearance of fuelwood. It is important to recognize and raise awareness of this resource. It is also essential that policies take it into account so that environmental management can be improved for people's benefit.

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# PROCEEDINGS

## EXPERT CONSULTATION ON ENHANCING THE CONTRIBUTION OF TREES OUTSIDE FORESTS TO SUSTAINABLE LIVELIHOODS

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